Patent

Amendments to the Claims

Claims 1-11 (canceled).

- 12. (new) A method of making a white light source, comprising: encapsulating a light-emitting diode in an epoxy resin having a phosphor dispersed therein, the light emitting diode having an emission from 420 to 490 nm, and the phosphor having a garnet structure as represented by A₃B₅O₁₂:Ce wherein A is terbium or terbium together with at least one of the elements Y, Gd, La, and/or Lu and B is at least one of the elements Al and Ga, the phosphor converting at least a part of the emission from the light-emitting diode into a longer-wave radiation.
- 13. (new) The method of claim 12 wherein A is solely or predominately terbium.
- 14. (new) The method of claim 12 wherein the light-emitting diode has an emission from 430 to 470 nm.
- 15. (new) The method of claim 13 wherein the light-emitting diode has an emission from 430 to 470 nm.
- 16. (new) The method of claim 12 wherein B additionally contains In.
- 17. (new) The method of claim 12 wherein the light-emitting diode is based on Ga(In)N.
- 18. (new) A method of making a white light source, comprising: encapsulating a light-emitting diode in an epoxy resin having a phosphor dispersed therein, the light emitting diode having an emission from 420 to 490 nm, the phosphor converting at least a portion of the emission from the light-emitting diode into a longer-wave radiation and having a garnet structure represented by

$$(Tb_{1-x-y}RE_xCe_y)_3(Al,Ga)_5O_{12}$$
, where
RE is Y, Gd, La and/or Lu;
 $0 \le x \le 0.5$ -y; and
 $0 < y < 0.1$.

- 19. (new) The method of claim 18 wherein x is in the range $0.25 \le x \le 0.5$ -y.
- 20. (new) The method of claim 18 wherein y is in the range 0.02 < y < 0.06.

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- 21. (new) The method of claim 18 wherein x is in the range $0.25 \le x \le 0.5$ -y and y is in the range 0.02 < y < 0.06.
- 22. (new) The method of claim 18 wherein the light source has a color temperature of below 5000 K.
- 23. (new) The method of claim 18 wherein the light source has a color temperature of 4500 K.
- 24. (new) The method of claim 12 wherein the phosphor contains from 0.03 to less than 3 moles of terbium per mole of phosphor.
- 25. (new) The method of claim 18 wherein the light-emitting diode is based on Ga(In)N.
- 26. (new) A method of making a white light source, comprising: encapsulating a light-emitting diode in an epoxy resin having a phosphor dispersed therein, the light emitting diode having an emission from 420 to 490 nm, the phosphor converting at least a portion of the emission from the light-emitting diode into a longer-wave radiation, the phosphor having a garnet structure represented by

$$(Tb_xRE_{1-x-y}Ce_y)_3(Al,Ga)_5O_{12}$$
, where
RE is Y, Gd, La and/or Lu;
 $0.01 \le x \le 0.02$; and
 $0 < y < 0.1$.

- 27. (new) The method of claim 26 wherein x is 0.01.
- 28. (new) The method of claim 26 wherein y is in the range $0.01 \le y \le 0.05$.
- 29. (new) The method of claim 27 wherein y is in the range $0.01 \le y \le 0.05$.
- 30. (new) The method of claim 27 wherein the phosphor has a garnet structure represented by $(Y_{0.50}, Gd_{0.45}Tb_{0.01}Ce_{0.04})_3Al_5O_{12}$.
- 31. (new) The method of claim 26 wherein the light-emitting diode is based on Ga(In)N.